

AMENDMENTS TO THE CLAIMS:

50. (Currently Amended) An *in vitro* process of ~~for~~ enabling meiotic recombination of partially homologous DNA sequences having up to 30% of base mismatches in yeast cells, said process comprising:

~~—genetically or physiologically manipulating yeast cells *in vitro*, said yeast cells comprising partially homologous DNA sequences having up to 30% of base mismatches, to render defective the enzymatic mismatch repair system of said yeast cells, and~~
~~—culturing said manipulated yeast cells *in vitro* to effect meiotic recombination of said partially homologous DNA sequences~~

(a) providing a first set of haploid yeast cells comprising a first DNA sequence, and having a defective enzymatic mismatch repair system;

(b) providing a second set of haploid yeast cells comprising a second DNA sequence which is partially homologous to the first DNA sequence by having up to 30% base mismatches with the first DNA sequence, and having a defective enzymatic mismatch repair system;

(c) mixing the first and second sets of cells to form diploid yeast cells;

(d) maintaining the diploid yeast cells under conditions to effect meiosis; and

(e) recovering the haploid yeast cells with recombined DNA sequences.

51. (Canceled)

52. (Currently amended) The process according to claim 50, wherein said enzymatic mismatch repair system of said yeast cells are rendered defective by ~~genetically or physiologically manipulating said yeast cells to delete or make defective at least one homologue of *mutS* protein and/or at least one homologue of *mutL* protein~~ a mutation of the mismatch repair gene PMS1 and/or a mutation of the mismatch repair gene MSH2.

53. (Currently amended) The process according to claim 52, wherein ~~said enzymatic mismatch repair system of said yeast cells are rendered defective by genetically or physiologically manipulating said yeast cells to delete or make defective at least one eukaryotic homologue of *mutS* protein~~ the mutation of the mismatch repair gene PMS1 and/or the mutation of the mismatch repair gene MSH2 is due to a deletion of the respective gene.

54. (Canceled)

55. (Currently amended) An *in vitro* process ~~of~~ for making hybrid yeast cells, said process comprising:
~~—mixing *in vitro* (a) a first group of yeast cells (i) comprising a first DNA sequence and (ii) having a defective enzymatic mismatch repair system which is made defective by genetic or physiological manipulation, with (b) a second group of yeast cells (i) comprising a second DNA sequence which is partially homologous to said first DNA sequence and which has up to 30% base mismatches with said first DNA sequence, and (ii) having a defective enzymatic mismatch repair system which is made defective by genetic or physiological manipulation, to form diploid yeast cells;~~

(a) mutating *in vitro* a first set of haploid yeast cells to render defective the enzymatic mismatch repair system of said cells and introducing a first DNA sequence into said cells;

(b) mutating *in vitro* a second set of haploid yeast cells to render defective the enzymatic mismatch repair system of said cells and introducing a second DNA sequence into said cells wherein the second DNA sequence is partially homologous to the first DNA sequence and has up to 30% base mismatches with the first DNA sequence;

(c) mixing the first and second sets of cells to form diploid yeast cells;

(d) culturing said diploid yeast cells *in vitro* to effect meiotic recombination of said partially homologous first and second DNA sequences, to make hybrid yeast cells[.], and

(e) recovering said hybrid yeast cells.

56. (Canceled)

57. (Currently amended) An *in vitro* process for obtaining hybrid DNA sequences, which comprises:

- (a) ~~making said hybrid yeast cells according to claim 56, conducting the process according to claim 55 to make hybrid yeast cells; and~~
- (b) isolating hybrid DNA sequences of said hybrid yeast cells.

58. (Previously presented) The process according to claim 57, wherein said hybrid DNA sequences comprise a gene.

59. (Currently amended) An *in vitro* process ~~of~~ for obtaining proteins encoded by hybrid DNA sequences comprising:

- (a) obtaining said hybrid DNA sequences according to the process of claim 57[,];
- and
- (b) expressing proteins encoded by said hybrid DNA sequences.

60. (Previously presented) The process according to claim 59, wherein said hybrid DNA sequences comprise a gene.

61-63. (Canceled)